DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

Jensen-Miller PRLA C-4275

Final Environmental Assessment No. CO-017-83-55

Green River/Hams Fork Coal Region
White River Resource Area
Rio Blanco County, Colorado

Prepared by the Bureau of Land Management

Craig District, Colorado

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1. INTRODUCTION

This Preference Right Lease Application (PRLA) Report sketches the coal resource information, mining assumptions, and environmental resources pertinent to the Jensen-Miller PRLA tract.

1.1 Purpose and Need

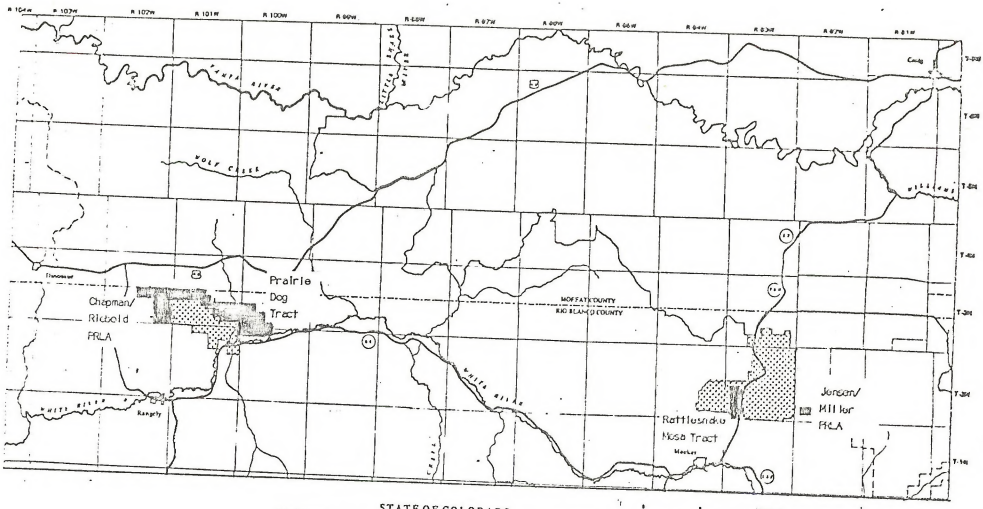
As a matter of policy, the Department of Interior must complete the processing of all PRLAs by December 1, 1984. The procedures for processing a PRLA are found in CFR 43, part 3430. After the applicant of a PRLA has completed the initial showing required for a PRLA, the Department of Interior must prepare an environmental assessment or environmental impact statement of the proposed PRLA area. A copy of the environmental assessment or environmental impact statement is sent to the applicant with a request for final showing. This Green River/Hams Fork Regional Coal Site Specific Analysis is being used as the document for the environmental assessment for the Jensen-Miller PRLA.

1.2 Location

The Jensen-Miller PRLA is located in Rio Blanco County, Colorado. The tract lies nine miles northeast of Meeker, Colorado (Figure 1). The tract is located in T2N, R92W, 6th P.M. (see Figure 2). The legal description of the tract is as follows:

T2N, R92W

Sec. 31: NE1/4, E1/2NW1/4, NE1/4SW1/4, N1/2SE1/4



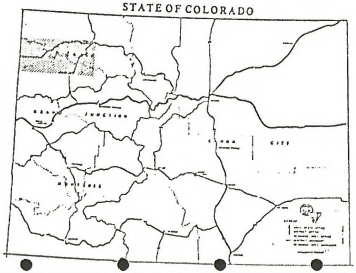


Figure 1

Location Map

General Location of the Jehsen-Miller Tract

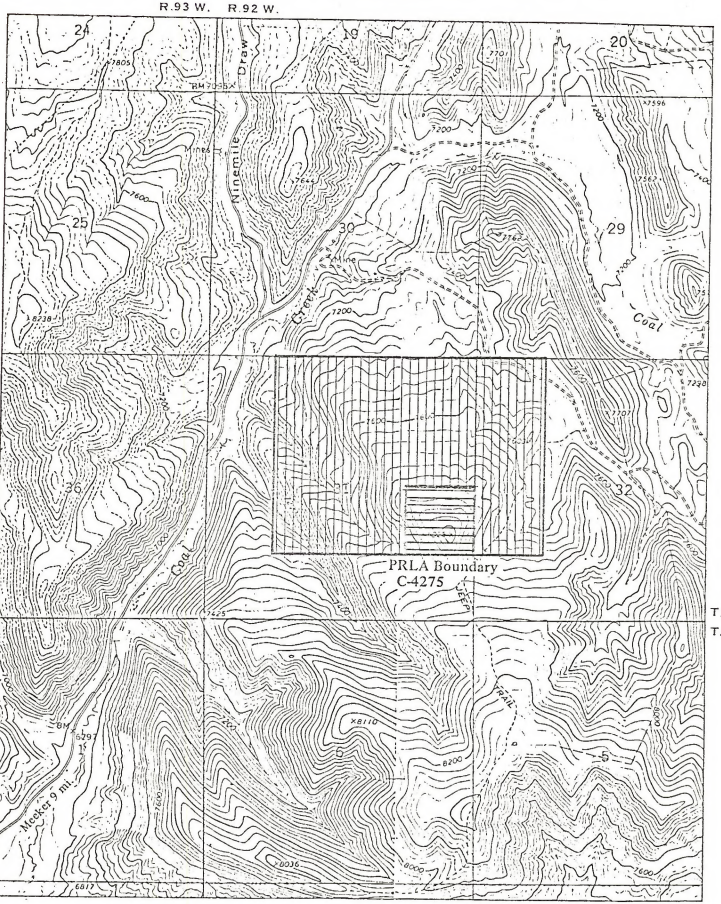


Figure 2
Jensen / Miller PRLA

Federal Surface

Private Surface

0 ½ 1 mile

N

100% Federal Coal

Sec. 32: W1/2NW1/4, NW1/4SW1/4

Total 480 Ac.

Breakdown of Surface Ownership

Federal Surface (40 Ac.)

T2N, R92W

Sec. 31: NE1/4SE1/4

Private Surface (440 Ac.)

T2N, R92W

Sec. 31: NE1/4, E1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4

Sec. 32: W1/2NW1/4, NW1/4SW1/4

1.3 Coal Resource and Mining Assumptions

The Jensen-Miller Preference Right Lease Application C-4275 was issued on 2/21/75. Initial showings of the application were made November 28, 1980. The coal deposits of the PRLA are in the extreme southeast portion of the Danforth Hills coal field. The delineated coal beds are part of the coal bearing Mesaverde Group of Upper Cretaceous age. This group is composed, in ascending order, of the Iles Formation and the Williams Fork Formation. The massive Trout Creek sandstone member caps the Iles Formation; the Williams Fork Formation contains the coal beds of interest and is an alternating series of massive sandstone, shaley sandstone, sand shale, black carbonaceous shale and coal.

Coal Resource

Tract Name: Jensen-Miller (PRLA C-4275)

State: Colorado

Leasing/Development Scenario: New Mine (Surface)

Elements	Tract Description
Acreage	480
Surface Ownership	91.7% Private (440 acres); 8.3% Federal (40 acres)
Mineral Ownership	100% Federal
Estimated Quantity of In Place Reserves	1,552,500 tons
Recoverable Reserves	1,397,250 tons (with a 90% recovery rate)
Number of Seams	One
Average Seam Thickness	7.5 feet
Average Quality	
BTU Content	10,600 to 10,930
Ash Content	4.7% to 6.0%
Sulfur Content	0.45% to 0.81%
Moisture Content	13.6% to 14.4%
Volatile Matter	36.2% to 38.4%
Rank of Coal	High-Volatile C-Bituminous
Fixed Carbon	41.2% to 45.6%
Type of Coal	Steam
Mining Considerations & Assumptions	
Type of Mine	Surface
Annual Disturbance	3 acres
Annual Production	30,000 tons
Total Disturbed Area	125 acres
Off Lease Access Road	3 acres
Mine Life	40 years
Work Force (Production)	4 employees
Work Force (Construction)	15 employees
Peak Construction	1992
Peak Production	1995
Facilities	5 acres
Transportation	Truck
Coal Market	Local

1.4 Alternatives

Two alternatives are being considered, the No Action Alternative and the Development Alternative. Two scenarios are assessed under the Development Alternative, development using surface mining methods and development using subsurface mining methods.

Development Alternative

Surface Mining Scenario: This scenario assumes that the Jensen-Miller PRLA would be leased through CFR 43, part 3430 and developed as a surface mine. This scenario is the applicant's proposed development and would result in a surface mine that would disturb 125 acres of land and produce 30,000 tons of coal annually. This alternative is not viable since the area the applicant proposed to surface mine under their initial showing was determined to be unsuitable through the application of the unsuitability criteria (Appendix A). The Coal Amendment to the White River Resource Area Land Use Plan determined that the NE1/4 of Sec. 31 and the W1/2NW1/4 of Sec. 32, T2N, R92W is unsuitable for surface mining due to critical elk winter range. Although this alternative is not viable, environmental consequences of disturbance are portrayed. This is done in the event the applicant shows an acceptable development method at a later date, in which case the environmental consequences, for the most part, would become applicable.

In the event of PRLA leasing under the "Surface Mining Scenario" of the Development Alternative, mitigating measures as outlined in Appendix B would be incorporated into the lease, in addition to the standard lease stipulations (Appendix C).

Subsurface Mining Scenario: This scenario assumes that the Jensen-Miller PRLA would be leased through CFR 43, part 3430 and developed as an underground mine. The applicant's initial showing proposed surface development; however, that proposal was not considered viable (see surface mining scenario above). With that determination, the applicant could propose to develop the PRLA by subsurface methods. The applicant would make such a proposal during the final showing. At this time it has not been determined if commercial quantities of subsurface coal exist. It will be up to the applicant to demonstrate that commercial quantities of subsurface coal exist within the PRLA. The applicant has not proposed mining by subsurface methods in their initial showing. If the applicant amends the intitial showing (43 CFR 3430.2-1) to indicate mining by subsurface, an environmental analysis will be prepared for that proposal. This alternative will not be discussed further in this document.

No Action Alternative

The No Action Alternative assumes that the PRLA would not be leased, development would not occur, the coal resource left intact and various ancillary facilities would not be constructed. The social or economic environment would not change and no impacts to existing resources would occur. This would only occur if the applicant failed to meet statutory or regulatory requirements or if a lease exchange were initiated. A lease exchange could be negotiated involving equitable units of leasable minerals, lease modification or receipt of the fair market value of the relinquished PRLA holding. In the event a lease exchange would occur an environmental assessment of the exchange action, including the exchange area if any, would be prepared at that time. This alternative will not be discusssed further in this document.

2. CLIMATE AND AIR QUALITY

2.1 Affected Environment

Climate

The closest meteorological station to the PRLA is located at Meeker, Colorado, which lies seven miles to the southeast. Average annual precipitation is 16 inches. The higher elevations to the north receive more mid-winter precipitation, in the form of snow. The mean annual temperature is 44 degrees F., with recorded extrems of -43 degrees F., and 96 degrees F. Frost-free periods vary widely from year to year. Days between freezing temperatures range from 121 days to 46 days, with an average of 100 days.

Air Quality

Air quality is generally very good throughout the area, with only minor amounts of dust from several dirt roads (BLM 1980).

2.2 Environmental Consequences

Climate

Regional or local climate changes are not probable as the result of PRLA development.

Air Quality

Vehicle use and surface disturbing activities would increase total suspended particulates (tsp). The predicted increase is difficult to ascertain, but assumptions are that it would be negligible. Based on observations of similar mine operations in the area, dust and traffic emissions would increase slightly from their existing levels due to increased vehicular travel on unimproved roads associated with the mine.

3. GEOLOGY

3.1 Affected Environment

Jensen-Miller PRLA is located in the southeastern portion of the Danforth Hills Coal Field approximately 7 miles northeast of Meeker, Colorado in Rio Blanco County. The topography is characterized by steep south-facing escarpments and moderately steep north-facing slopes. The PRLA is dissected by several ephemeral streams and drained by the perennial flowing Coal Creek which joins the White River approximately seven miles to the southwest. Surface elevations range from 8025 feet to approximately 7200 feet near Coal Creek in the northwest corner of the PRLA.

3.1.1 Stratigraphy

Rocks outcropping on the PRLA belong to the Mesaverde Group of late Cretaceous age. The Mesaverde Group is represented by the Iles Formation at its base and the Williams Fork Formation at its top in the Meeker area.

The Iles Formation consists of about 1600 feet of fine-grained, medium- to massive-bedded sandstone interbedded with siltstone, sandy shale, carbonaceous gray to black shale, and coal. The Iles is capped by the Trout Creek sandstone, which is a prominent cliff former that is about 100 feet thick. Coal occurs within the "lower" coal group and the Black Diamond coal group; however, coal has only been identified from the Black Diamond coal group in the area of the PRLA. The Black Diamond coal occurs at a depth of 550 to 650 feet below the surface and about 245 feet below the Trout Creek Sandstone.

The Williams Fork Formation ranges in thickness from about 4500 to 5000 feet in the region. The formation is divided into three units: a lower coal-bearing unit, the Lion Canyon Sandstone Member, and an upper coal-bearing unit. The lower coal unit is divided into the Fairfield and Goff coal groups. Coal within the PRLA occurs in the Fairfield coal group. The coal seam is about 200 feet above the Trout Creek Sandstone and ranges from six to one hundred feet below the ground surface.

3.1.2 Structure

The prominent structural feature in the region is the Sulfur Creek syncline. The axial plunge of the syncline is to the northwest and located about one-half mile northeast of the PRLA. The syncline is asymmetric with dips approaching 90 degrees to the north of the PRLA, across Coal Creek. Dips on the PRLA range from eight to eleven degrees.

The 90 degree dip of strata north of Coal Creek suggests the possibility of high angle reverse faulting.

3.1.3 Minerals

3.1.3.1 Coal

The pertinent coal deposits are in the extreme southeast portion of the Danforth Hills coal field. In general, the coal beds are discontinuous and are difficult to correlate laterally. The coal is mainly high volatile C bituminous in rank, though some of the upper beds may be subbituminous.

3.1.3.2 Oil and Gas

Although the subject area has been considered prospectively valuable for oil and gas, there has been no production of either within the PRLA. The nearest production is in the Thornburgh Field located approximately 12 miles north of the PRLA and Wilson Creek Field located approximately 13 miles northwest.

The Thornburgh field produces both oil and gas from the Dakota sandstone, Navaho and Entrada sandstones and the Weber sandstone. Wilson Creek production is from the Morrison formation, Entrada sandstone and the Weber sandstone. All of these formations are found at depth beneath the Jensen-Miller PRLA along with other formations that have yielded shows of oil and gas in the Danforth Hills Area: Dakota sandstone, Niobrara shale, Moenkopi formation and the Shinarump formation.

The N1/2SE1/4 Sec. 31, T2N, R92W and the NE1/4SW1/4 Sec. 31, T2N, R92W are covered by oil and gas lease C-18452.

3.1.3.3 Locatable Minerals

Minor deposits of uranium outcrop just east of the PRLA in the Salt Wash Member of the Morrison Formation. There has been no production to date; however, the Morrison Formation dips beneath the subject PRLA, subsequently uranium production in Jensen-Miller PRLA is conceivable. Eight mining claims are located on the subject PRLA; however, present economic and technologic conditions preclude any uranium production.

3.1.3.4 Saleable Minerals

Alluvium and colluvium deposits consisting of rock debris, sand, silt and clay are found in relatively small quantities in the drainages of Jensen-Miller PRLA. Larger quantities of scoria are found on the PRLA. These clinker deposits can be quarried without blasting and have been used for road construction and maintenance.

3.1.4 Paleontology

The Iles Formation contains pelecypods, leaf impressions, fossil plants, Ammonites and Inoceramus clams (Hancock 1925, Miser 1929, Buss, Ely and Campbell 1955). The Williams Fork Formation has been characterized as having an almost total lack of fossils, except for trace fossils (Collins 1976). However, the following fossils have been found and recorded: fossil plants,

leaf impressions, ammonites, pelecypods and gastropods. All of the fossil remains in the Mesaverde Group have been characterized as common types that have a wide stratigraphic range and a broad distribution, so they are of little scientific value.

3.2 Environmental Consequences

The major impact to the geology of the PRLA would be the removal of 1,397,250 tons of coal during the 40 year mine life. Destruction of the natural topography would also be unavoidable. Any conflict between coal development and oil/gas development will be worked out by the lessees.

Slopes in the PRLA range from 15% grade in the center of the lease to 20% on the east and west boundaries of the PRLA. Mining of the lease would be limited (see Figure 3) to the center of the lease where the slopes are only 15%. Problems could arise, however, with landslides, rockslides, and slumping during excavation of the coal, due to dip-slope conditions.

The possible conflict between uranium and coal production would be minimal to non-existent. Present mining plans for coal indicate there would be no disturbance below the base of the Williams Fork and certainly none below the base of the Iles.

There are no known major faults located on Jensen-Miller PRLA. Minor faulting associated with the Sulfur Creek syncline would probably be encountered during mine operation; however, the potential for any geologic hazard associated with the minor faults is very low.

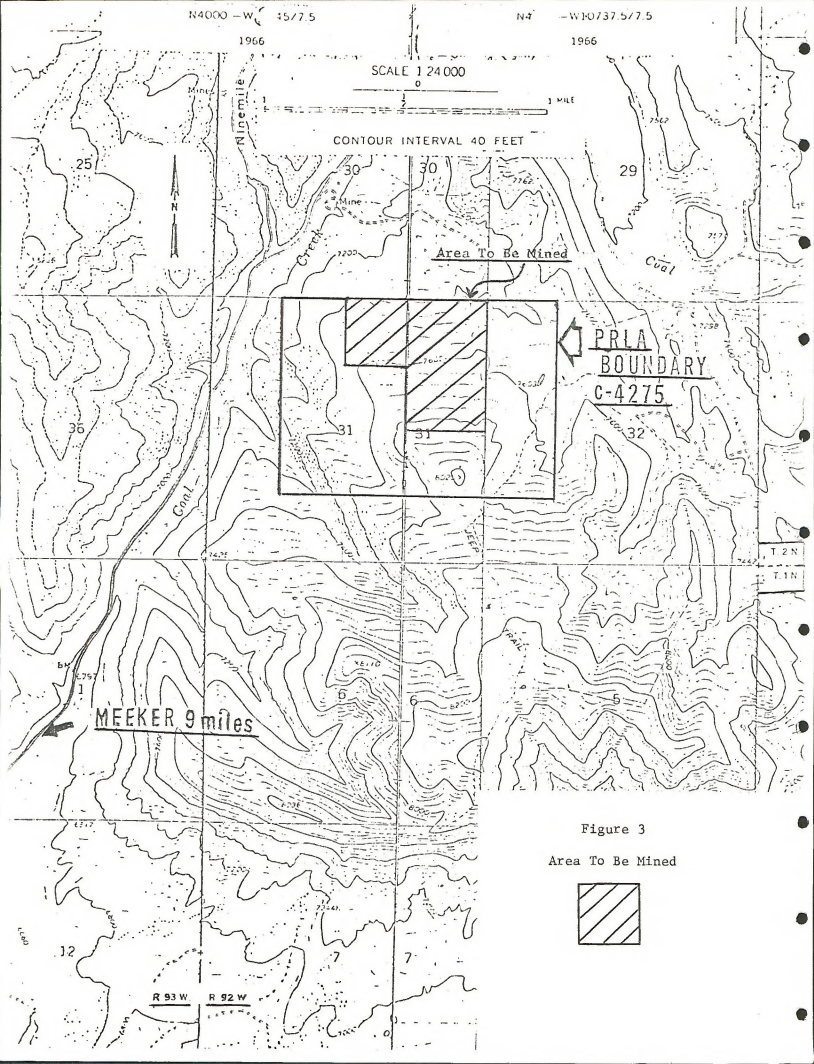


Figure 3

Area To Be Mined

No potential or major impacts to saleable minerals are expected on Jensen-Miller PRLA.

Disturbance of paleontological resources would result in both adverse and beneficial impacts. Adverse effects would consist of loss of plant, invertebrate and vertebrate fossil remains used for research and education. Beneficial effects would be the discovery of otherwise hidden or unexposed fossil remains. Neither the adverse nor the beneficial impacts are expected to be of any importance.

3.2.1 Short Term vs. Long Term Impact

Short term use of the proposed PRLA for the mining of coal would mean the permanent removal of a non-renewable resource. If coal is not mined at present, improvements in mining technology might increase coal production in the future.

3.2.2 Irreversible/Irretrievable Commitment of Resources

The mining and extraction of 1,397,250 tons of coal would be considered an irretrievable commitment.

3.2.3 Committed Mitigation

Paleontological Resources

(1) Before undertaking any activities that may disturb the surface of the leased lands, the lessee shall contact the Bureau of Land Management to determine whether the authorized officer will require the lessee to conduct a paleontological appraisal of the mine plan and adjacent areas, or exploration plan areas, that may be adversely affected by lease-related activities. If the authorized officer determines that one is necessary, the paleontological appraisal shall be conducted by a qualified paleontologist approved by the authorized officer of the surface managing agency (BLM if the surface is privately owned), using the published literature and, where appropriate, field appraisals for determining the possible existence of larger and more conspicuous fossils of scientific significance. A report of the appraisal and recommendations for protecting any larger and more conspicuous fossils of significant scientific interest on the leased lands so identified shall be submitted to the authorized officer of the surface managing agency (BLM if the surface is privately owned). When necessary to protect and collect the larger and more conspicuous fossils of significant scientific interest on the leased lands, the lessee shall undertake the measures provided in the approval of the mining and reclamation plan or exploration plan.

(2) The lessee shall not knowingly disturb, alter, destroy or take any larger and more conspicuous fossils of significant scientific interest, and shall protect all such fossils in conformance with the measures included in the approval of the mining and reclamation plan or exploration plan.

(3) The lessee shall immediately bring any such fossils that might be altered or destroyed by his operation to the attention of the Regional Director or the District Mining Supervisor, as appropriate. Operations may continue as long

THE SITE SPECIFIC ANALYSIS
GEOLOGY

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Geologic hazards		None	-------->	-------->	-------->	-------->	Good	None	
Seismic activity		None	-------->	-------->	-------->	-------->	Good	None	No major faults low seismic zone
Subsidence potential	See narrative	None	-------->	-------->	-------->	-------->	Good	None	Dips 15$ - 8° competent formation see narrative
Potential for other minerals		Good to moderate	-------->	-------->	-------->	-------->	Fair	None	See narrative Oil and gas
Paleontology	See narrative	Low	-------->	-------->	-------->	-------->	Fair	Loss of fossil remains	Beneficial impact from exposure

as the fossil specimen or specimens would not be seriously damaged or destroyed by the activity. The Regional Director or the District Mining Supervisor, as appropriate, shall evaluate or have evaluated such discoveries brought to his attention and, within five (5) working days, shall notify the lessee what action shall be taken with respect to such discoveries.

(4) All such fossils of significant scientific interest shall remain under the jurisdiction of the United States until ownership is determined under applicable law. Copies of all paleontological resource data generated as a result of the lease term requirements will be provided to the Regional Director or the District Mining Supervisor, as appropriate.

(5) The cost of any required salvage of such fossils shall be borne by the United States.

(6) These conditions apply to all such fossils of significant scientific interest discovered within the lease area whether discovered in the overburden, interburden, or coal seam or seams.

4. SOILS

4.1 Affected Environment

The soils within the tract are formed primarily in alluvium, colluvium and residuum from mixed sandstone and shale. They occur mainly on mountain valley bottoms, upland mountain sideslopes and narrow ridges. There are also escarpment faces and sandstone rock outcrops found in the lease area.

Six mapping units have been delineated within PRLA C-4275 and described by the Soil Conservation Service in an Order 3 soil survey of Rio Blanco County. From these six mapping units, three soils are classified at the series level and three mapping units are complexes of three individual series. Refer to the Soils Map (Figure 4). They are: Unit x7 Silas loam; Unit x24 Margel-Redthayne-Dollard complex; Unit 45D Zoltay clay loam 8-15 percent slopes; Unit 45E Zoltay clay loam 15-25 percent slopes; Unit x85 Jerry-Thornburgh-Rhone complex, and Unit 344 Lamphier-Tampico-Kamack loams. The physical characteristics and limitations for each of these mapping units occurring in the tract are listed in Table 1.

4.1.1 Prime and Unique Farmlands

According to the map prepared by the U.S. Department of Agriculture-Soil Conservation Service and Colorado State University Experiment Station, dated 1979 and titled: Important Farmlands of Rio Blanco County, Colorado, Sheet No. 1 of 3, no prime farmlands occur on the Jensen-Miller PRLA area or on adjacent lands. The nearest mapped prime farmlands in the same drainage basin occur about 2 miles downstream, to the south of the lease area. However, only upstream hydrologic induced imbalance could significantly alter the productivity of these lands.

4.2 Environmental Consequences

Surface mining the tract would disturb 120 acres of Zoltay clay loam soil. This soil has a poor reclamation potential because of the shallow depth of

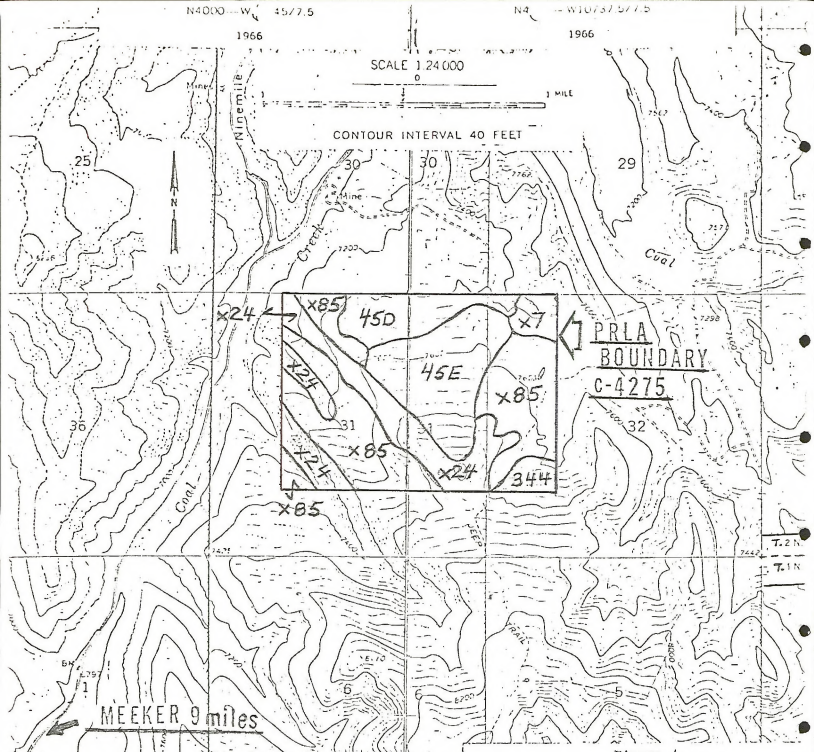


Figure 4
SOILS MAP

Mapping Unit Symbol	Name
x7	Silas loam 0 to 8 % slopes
x24	Mergel-Redthayne-Dollard complex 8 to 65 % slopes
45D	Zoltay clay loam 8 to 15 % slopes
45E	Zoltay clay loam 15 to 25 % slopes
x85	Jerry-Thornburgh-Rhone complex 8 to 65 % slopes
344	Lamphier-Tampico-Kamack loam 5 to 60 % slopes

topsoil and heavy clay textures. These characteristics would make revegetation and stabilization difficult and costly. Before the area is disturbed the lessee must demonstrate that the disturbed area can be reclaimed. Suitable topsoil may have to be stripped from adjacent areas or a suitable plant growth media segregated from the overburden and used in place of topsoil. This reclamation procedure, although more costly (may double the cost) will make revegetation possible.

During the mining operation some soil loss would occur due to wind and water erosion. However this loss would be small due to conservation practices required in the mine plan.

4.2.1 Short Term vs. Long Term

The return of a significant part of the disturbed area to a productive state after the mine life will be difficult and costly. The alteration of the soil profile, disruption of the nutrient cycling and the loss of soil by erosion would decrease the site potential over the long term on this harsh and fragile site.

4.2.2 Irreversible and Irretrievable Commitments

Complete alteration of the soil horizons which formed during thousands of years of weathering can be considered irreversible.

Loss of topsoil is inevitable on the disturbed area due to the wind and water erosion. The lost soil would be irretrievable but soil treatments and grading are expected to lessen this impact.

TABLE I

SOILS MAPPING UNITS FOR THE JENSEN-MILLER PRLA

MAPPING UNIT

Symbol	Name	Extent Composition %	Landscape Position	Slope %	Depth and Drainage Class	Texture	SURFACE Depth (inches)	pH	Texture	SUBSURFACE Depth (inches)	pH	Substrate Material
x7	Silas Loam	3% of the lease area 13 acres	Mountain valley bottoms	0-8	Deep and well drained	Fine sandy loam	10	6.6-7.3	Stratified, sandy loams, loam, and sandy clay loams	Extending to over 60"	7.4-8.4	Formed from mixed alluvium from sandstone and marlstone
x24	Mergel-Redthayne Dollard Complex	23% of the lease area occupying 113 acres	Mountain slopes and narrow ridges	8-65	Mod. deep to deep and well drained							Alluvium, colluvium and residuum from sedimentary rocks
	Mergel	35% of the mapping unit	"	"	Moderately deep	Loam	7	7.4-8.4	Clay loam	Extending to 40"	7.8-8.4	"
	Redthayne	30% of the mapping unit	"	"	Deep	Loam	8	6.6-7.8	Loam to clay loam	Extending to 60"	6.6-9.0	"
	Dollard	20% of the mapping unit	"	"	Moderately deep	Clay loam to silty clay loam	3	7.4-8.4	Silty clay loam silty clay, clay loam to clay	Extending to appx. 26"	7.8-9.0	Weathered shale
45D	Zoltey clay loam	9% of the lease area 41 acres	Alluvial fans and upland slopes	8-15	Deep and well drained	Light clay loam	9	6.6-7.8	Heavy clay loam to gravelly clay loam	Extends to 60" or more	6.6-8.4	Alluvium and colluvium from sandstone and shale
45E	Zoltey clay loam	22% of the lease area 110 acres	"	15-25	"	"			"	"		"

TABLE 1

MAPPING UNIT Symbol	Name	Available Water Holding Capacity	Rate of Surface Runoff	Erosion Hazard	Erosion Factor K	Erosion Factor T	Wind Erodibility Group	Shrink Swell Potential	Limitations For Topsoil	Limitations For Roadfill
x7	Stiles Loam	High	Slow	Slight	.24	5	5	Low	Good source for topsoil but poor source for topsoil due to low strength	
x24	Mergel-Redthayne Dollard Complex									
	Mergel	Moderately low	Medium	Slight to moderate	.2	5	5	Low	Steep slopes, poor source due to high content of coarse fragments	Steep slopes over 25%
	Redthayne	Low	Medium	Slight to moderate	.28-.32	5	8	Low	Steep slopes and high content of coarse fragments	Poor on slopes greater than 25%
	Dollard	Medium to high	Medium to high	Slight to moderate	.37	2	4L	Moderate to high	Fine textures and shallow depth of topsoil	Poor due to the potential for landslides
450	Zolfay clay loam	High	Medium	Moderate	.20-.24	5	5.6	High	Poor source due to high clay content, low streagth and high shrink swell potential	

TABLE 1

MAPPING UNIT Symbol	Name	Extent Composition %	Landscape Position	Slope %	Depth and Drainage Class	Texture	SURFACE Depth (inches)	pH	Texture	SUBSURFACE Depth (inches)	pH	Substrate Material
x85	Jerry-Thornburgh Rhone Complex	40% of the lease area 191 acres	Mountain slopes and narrow ridges	8-65								Formed in alluvium and colluvium from sedimentary rocks
	Jerry	35% of the mapping unit	"	"	Deep and well drained	Fine sandy loam or loam	5	6.6-7.3	Loam to clay Loam to clay	Extending to 40" or more	6.6-8.4	"
	Thornburgh	30% of the mapping unit	"	"	Moderately deep and well drained	Channery loam	14	6.6-7.8	Channery loam to to very channery fine sandy loam	Extending to 40" or more	7.0-7.8	"
	Rhone	20% of the mapping unit	"	"	Moderately deep and well drained	Loam	26	6.6-7.8	Channery loam to sandy clay loam	Extending to 40" or more	6.6-7.8	"
344	Lamphier-Tampico-Kemack Looms	3% of the lease area 12 acres	Mountain sideslopes and high upland slopes	5-60								
	Lamphier	40%	"	"	Deep and well drained	Loam	26	6.1-7.3	Loam, stony sandy loam to sandy clay loam	Extending to 60" or more	6.1-7.3	Alluvium, colluvium and residuum from sandstone and shale
	Tampico	30%	"	"	Deep and well drained	Loam	7	5.6-7.3	Loam, clay loam to cobbly clay loam	Extending to 60" or more	6.1-7.8	"
	Kemack	20%	"	"	Deep and well drained	Silt loam to gravelly loam	15	6.1-6.5	Very gravelly loam	Extending to 44'	6.1-6.5	"

TABLE 1

MAPPING UNIT

Symbol	Name	Available Water Holding Capacity	Rate of Surface Runoff	Erosion Hazard	Erosion Factor K	Erosion Factor T	Wind Erodibility Group	Shrink Swell Potential	Limitations For Topsoil	Limitations For Roadfill
x85	Jerry-Thornburgh Rhone Complex									
	Jerry	High	Medium	Slight to moderate	.24-.28	5	6	Low to High	Poor source material due to steep slopes and 35 percent or more clay content	
	Thornburgh	Moderate	Medium	Slight to moderate	.24	5	8	Low	Poor source due to steep slopes and greater than 35 percent coarse fragments	
	Rhone	Moderate	Medium	Slight	.24	3	8	Low	Steep slopes are the greatest limiting factor on this soil series	
344	Lamphier-Tampico Kamack Loams									
	Lamphier	High	Medium	Slight unless site soil is disturbed and unprotected on steep slopes	.28-.32	5	5	Low to moderate	Slope and low stength are the major limiting factors roads should be designed to utilize existing slopes to keep cut and fill slopes to a minimum. Potential for source material is poor due to steep slopes, low strength and shrink swell potential. Coarse fragment may also limit use for top soil.	
	Tampico	High	Medium	"	.32-.37	5	6	Low	"	
	Kamack	Low to moderate	Medium	Moderate	.2	2	8	Low	"	

THE SITE SPECIFIC ANALYSIS
SOILS

Tract Name or Number: Jonson-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Baseline	Anticipated Impact 1992	1995	2000	EML	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
Prime and unique farmlands	USDA, SCS Public Law 45-87 Section 657.5	None	-------->	-------->	-------->	-------->	Good (SCS, CSU Prime and Unique Farmlands map of Rio Blanco CO)	Any upstream hydrologic induced imbalance may alter the productivity of those lands located 2 miles downstream	Ground water level monitoring
Erosion potential	Federal (OSM, SMCRA), state (CMLRD) and local reclamation regulations		5 Ac	3-5 tons/ Ac/yr lost by wind and water erosion 14 Ac	29 Ac	125 Ac	Good SCS Rio Blanco Soil Survey Manuscript (unpublished)	Soil lost from the site will be irretrievably lost	Disturbed and unprotected soils on steep slopes may be severely eroded, but the impact will be lessened by Reclamation Regulations
Chemical limitations	Federal (OSM, SMCRA), state (CMLRD) and local reclamation regulations	None	-------->	-------->	-------->	-------->	Fair (Feldman and Terrelliger Jr, 1978)	None	Chemical limitations can be avoided by separating toxic overburden

THE SITE SPECIFIC ANALYSIS
SOILS

Tract Name or Number: Jenson-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Physical limitations	Federal (OSM, SMCRA), state (CMLRB) and local reclamation regulations		5	14	29	125 Ac	Good SCS soil survey manuscript of Rio Blanco Co and Tiedeman and Terwilliger 1978.		Lessee will have to demonstrate the area is reclaimable before any surface disturbance. Suitable topsoil may have to be stripped from djacent areas or it must be proven that suitable plant growth media is available in the overburden or from silted in ponds.

THE SITE SPECIFIC ANALYSIS
SOILS

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Physical profile	Federal (OSM, SMCRA), state (CMLRB) and local reclamation regulations		5	14	29	125 Ac	Good from scenario #1 assumptions SCS Soil Form 5's	The loss of the natural soil integrity and the creation of new soil communities due to the alteration of: soil horizons, structure, texture, permeability, infiltration rates, rooting depths, parent materials and microclimates, plus the alteration of nutrient and energy cycling in the soil which will all affect the soil productivity	

THE SITE SPECIFIC ANALYSIS
SOILS

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: FRLA

Resource Element	Committed Mitigation	Baseline	Anticipated Impact 1992	1995	2000	EML	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
Suitability as plant growth media	Federal (OSM, SMCRA), state (CNLRB) and local reclamation regulations	Poor	-------->	-------->	-------->	-------->	Good SCS Soil Form 5's		An alternative site for topsoil collection should be found prior to any surface disturbance
Availability of plant growth media	Reclamation regulation	Unknown	-------->	-------->	-------->	-------->	Fair		Lessee must prove suitable plant growth media is available prior to any surface disturbance

THE SITE SPECIFIC ANALYSIS
SOILS

Tract Name or Number: Jenson-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact: Baseline	1992	1995	2000	EML	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
Occurrence of toxic elements	Federal (OSM, SMCRA), state (CDLAB) and local reclamation regulations	None	-------->	-------->	-------->	-------->	Fair (Tiedeman and Terwilliger 1978)		If toxic elements are encountered in the overburden keep that material buried and away from the stockpiled topsoil
Land use planning stipulation	None	None	-------->	-------->	-------->	-------->	Poor		

The texture of the topsoil would be altered by mixing within itself and by the introduction of quantities of fine textured subsoil materials with very low nutrient levels which would be incorporated during the removal process.

Impacts to the soils would result from the removal, handling and stockpiling of the topsoil. The primary impacts to the topsoil would occur in the form of destruction of the soil structure and thus decrease moisture infiltration and root penetration.

5. WATER QUALITY/HYDROLOGY

5.1 Affected Environment

5.1.1 Surface

Drainage basins at the Jensen-Miller PRLA site include three small ephemeral streams and numerous very small channels in the northern half of the tract. Most of the run-off is produced from October through June intense rains and rapid snowmelt. No floodplains exist on the tract. Alluvial valley floors occuring on the tract are small and no agricultural activities occur on them.

Adjacent to the coal tract is perennial flowing Coal Creek. Eleven years of U.S. Geological Survey recorded data on surface discharges show Coal Creek flowing about 5.2 cubic feet annually. Coal Creek's water can generally be classified as a calcium sulfate, bicarbonate type stream with total dissolved solids around 600 mg/l. Surface water quality gathered downstream near

agriculturally active land indicate a downstream increase in total dissolved solids (TDS), calcium, sodium, chloride, and sulfate with pH remaining relatively constant.

Although long-term data is lacking for sediment yield and erosion for the mine area, estimated sediment yields range from 0.3 to 0.7 acre-foot per square mile per year for watersheds similar to the Coal Creek drainage.

There are two small stock ponds in the eastern quarter of the PRLA. Recharge is mainly from surface run-off and snowmelt in the spring. Groundwater recharge may occur in the northernmost pond.

5.1.2 Groundwater

Groundwater occurs in two principal water-bearing formations. These aquifers include the undifferentiated sandstone, shale, and coal seams of the Williams Fork Formation and the Trout Creek sandstone aquifer of the underlying Iles Formation. Both the permeabilities and yields of these formations are very low. The hydraulic gradient of these formations on tract runs from south to north.

The Williams Fork Formation, because of the nature of the undifferentiated sandstone and other low-permeability stratigraphic units, is probably not a laterally persistent, or continuous aquifer system. Past studies have indicated that the coal seams are hydraulically isolated from the overburden and surface alluvium in the area. Well yields within the Williams Fork Formation in the surrounding area average less than 10 gallons per minute.

Most of the mineable area on tract is in a small lobe of the Williams Fork Formation with the remaining larger portion belonging to the Iles Formation and the outcropping Trout Creek Member. The formations and coal beds dip to the north, thus disallowing for a good source of recharge except for deep percolation of precipitation. The Trout Creek aquifer outcrops to the south of the mining area within the tract. Yields for this member of the Iles Formation average about 10 gallons per minute.

Subsurface water quality sampled from various coal seams and the overburden in the area show a wide variability in chemical makeup and ranges in total dissolved solids from 200 to 8000 mg/l. No outcroppings of spring sources were observed within the tract.

5.2 Environmental Consequences

5.2.1 Surface

Mining would modify the surface and groundwater characteristics and sediment discharge within the tract. Clearing 3 acres of vegetation and overburden each year for mining and facilities would probably increase sediment yield and overland flow which would increase dissolved solids into Coal Creek. Waste water and sewage treatment facilities, would tend to increase surface flow if treated effluent is discharged rather than recycled. This would reduce sediment yields into Coal Creek.

Sediment yields would be insignificant if all diversion ditches proposed in the mine plan are channeled into settling ponds, although total dissolved

solids would still present a minor impact. Surface run-off can be diverted from coal piles by ditches to prevent its contamination by the coal.

The alluvial valley floors on the tract will not be impacted by, or due to, the mining activities.

5.2.2 Groundwater

The removal of coal would cause groundwater to flow into mined seams, intermixing, and partially dewatering the sandstones and shales lying upslope from the mined area. Aquifer tests indicate that the coal and sandstones of this area have limited ability to transmit water; therefore, virtually no vertical hydraulic interconnection between the individual coal seams existed before surface mining took place. The amount of dewatering which will take place in the Williams Fork Formation will be quite small due to the already low quantities within the formation and also due to the hydraulic gradient sloping to the north.

The lowest coal seam that will be mined is stratigraphically some 200-300 feet above the top of the Trout Creek sandstone of the Iles Formation. Since the stratigraphic separation is so great between the coal seam and the Trout Creek sandstone, no impact on its hydrologic conditions are expected to result from the proposed mining operations.

The removal of coal and associated overburden would ultimately result in an increase of available groundwater storage once the reclaimed spoils are redeposited. During post mining phases, as the reclaimed spoils fill with

THE SITE SPECIFIC ANALYSIS
WATER QUALITY/HYDROLOGY

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Surface Water Type of Occurrence	All disturbed channels would be reconstructed by OSM regulations.	Three ephemeral drainages with numerous very small channels in the northern one-half of the PRLA drain the PRLA area	Small channels in northern one-half of PRLA will be mined. Channels in mined area will be reconstructed	----------	-------->	All channels will be reconstructed to similar baseline conditions.	Field reconnaissance and U.S. Geological Survey 7 1/2' topographic maps	Slight loss in surface water run-off is expected due to an increase in ground water infiltration	The three major ephemeral drainages will not be disrupted on the tract
Importance to Livestock and Wildlife	Augmentation plan submitted to the State of Colorado by the mining company	Two small stock ponds in Section 32 of the tract	None	None	None	None	Aerial photos USGS 7 1/2' topographic maps		No loss of run-off water to these stock ponds is expected. Entire drainage area above ponds will not be mined. Minimal impacts are expected in this drainage.

THE SITE SPECIFIC ANALYSIS
WATER QUALITY/HYDROLOGY

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Surface Water Quantity	Comply with OSM and CMLRB requirements	Estimated run-off is about 0.36 inch (14.5 ac-ft) annually	Slight increase in run-off	-------->	-------->	Slight decrease in run-off due to greater storage in spoils aquifer	Based on estimated potential water balance for watersheds in area (Hooker area mine DEIS)	Slight loss in surface water run-off is expected due to an increase in ground water infiltration and storage in new reclaimed spoils aquifer	Loss will be fairly minor. No loss is expected to the three ephemeral streams on tract
Quality	Comply with OSM and CMLRB water quality requirements and Non Point Discharge Effluent System Permit	Surface water quality in Coal Creek adjacent to and gaged below the tract indicates all dissolved solid constituties at an acceptable level	Dissolved solids will increase but should not impact Coal Creek	-------->	-------->	Dissolved solids will increase with time due to chemical weathering but should not reach impactable levels	Based on limited data from ongoing coal mining operations in area	Slight decrease in water quality which will remain at the post mining level or decrease slightly with time	No significant impact on aquatic biology of receiving water. Repacted spoil will induce a more rapid chemical weathring due to increased infiltration

THE SITE SPECIFIC ANALYSIS
WATER QUALITY/HYDROLOGY

Tract Name or Number: Rattlesnake Mesa

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EMS			
Surface Water Importance to People	Augmentation plan submitted to the State of Colorado by mining company	Surface run-off from the tract is not used for individual or municipal supplies	None	-------->	-------->	-------->	Inferred from field observation and water rights filings	None	Minor reduction of flow to White River. Will reduce flow in Colorado River by corresponding amount
Importance to Industry		Surface run-off from the tract is not used for industry	None	-------->	-------->	-------->	Inferred from field observation and water rights filings	None	
Salinity of receiving waters (White River) Coal Creek	Governed by Non Point Discharge Effluent System Permit	No salinity problem in White River or Coal Creek	Salinity will increase slightly	-------->	-------->	Salinity will increase slightly due to chemical weathering of the spoils	Inferred from water quality samples and past mining reports	An increase in salinity to the Colorado River and a higher level than baseline amounts	

THE SITE SPECIFIC ANALYSIS
WATER QUALITY/HYDROLOGY

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Surface Water Erosion and Sediment Action	Comply to CMLRB and OSM regulations and Non Point Discharge Effluent System Permit	Mining area appears to be moderately stable estimated sediment yield as 0.3 to 0.5 ac-ft/sq mi/year (1-2 tons per acre) southern portion of tract is more erosive due to steeper slopes less vegetation sediment yield is estimated to be 0.5-0.7 ac-ft/sq mi/yr	Sediment yield will increase slightly	-------->	-------->	With revegetation over time sediment will decrease to near baseline conditions	Estimates from similar watershed studies conducted in the area (Meeker area mine DEIS)		Long term sediment yields to Coal Creek will be low due to sediment holding ponds constructed at base of mining area

THE SITE SPECIFIC ANALYSIS
WATER QUALITY/HYDROLOGY

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact Baseline	1992	1995	2000	EML	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
Ground Water Type of Occurrence (Aquifers)		Confined coal seam aquifers in the Williams Fork Formation confined Trout Creek Member of the Iles Formation. No wells or springs in mining area	-------->	-------->	-------->	New unconfined aquifer from reclaimed spoils	Inferred from field observation geology and topography of tract		New aquifer in reclaimed spoils will have greater storage than previous confined and isolated aquifers of the coal seams at the expense of lowered water quality
Quantity	Non Point Discharge Effluent System Permit	Yield rates for the Williams Fork Formation are relatively low (<10 gal/min.) Trout Creek Member of the Iles Formation reflect the same rates	Yield would slightly decrease in WFF no change in Iles Formation	-------->	-------->	Yield would increase over baseline conditions in the Williams Fork Formation on tract. No change for Iles Formation	Inferred from past mining operations and geology of the area		Maximum amount of inflow and mine discharge depends on the amount of compaction of the reclaimed spoils and the amount of fracturing of the stratas surrounding the spoils area

THE SITE SPECIFIC ANALYSIS
WATER QUALITY/HYDROLOGY

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact: Baseline	1992	1995	2000	EOL	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
Ground Water Quality	Comply with OSM and CMLRB water quality requirements and Non Point Discharge Effluent System Permit	Coal seam aquifers range from 500 to 3500 mg/l dissolved solids		-------->	-------->				Trout Creek aquifer will not be impacted unless overburden is completely stripped off
Land Use Planning Stipulations		None	-------->	-------->	-------->	-------->			
Ground Water Importance to Livestock and Wildlife	Augmentation plan submitted by mining company to State of Colorado	No known springs or wells exist on tract. One stock pond in NE1/4 Sec. 31 may receive recharge from the alluvial ground water	None	-------->	-------->	Springs may appear from newly reclaimed spoils aquifer	Field observation aerial photos USGS topographic maps	Stock ponds springs and water wells in the area affected by aquifer disruption may yield greater quantities and dissolved solids or yield substantially lower quantities with greater dissolved solid or completely cease flowing	By restructuring and intermixing the aquifer systems in the Williams Fork Formation new springs may appear. Water quality will be somewhat diminished from surrounding springs in area due to chemical weathering in the spoils.

THE SITE SPECIFIC ANALYSIS
WATER QUALITY/HYDROLOGY

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Importance to People	Augmentation plan submitted to the State of Colorado by mining company	No current potable water sources exist on tract. Wells in Williams Fork Formation yield approximately 10 gal/min or less	None	-------->	-------->	-------->	Water rights filings, field reconnaissance		Water will be more obtainable in mined area at completion of mining operation but will be higher in dissolved solids
Floodplains and Wetlands	Federal Land Policy Management Act - BLM Executive Order 11990 Executive Order 11988	No floodplains exist on the tract	None	-------->	-------->	-------->	Field observation and USGS topographic maps	None	Three ephemeral channels exist on tract with small area drainages

THE SITE SPECIFIC ANALYSIS
WATER QUALITY/HYDROLOGY

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: Surface Mine

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Alluvial Valley Floors	PL 85-97 Surface Mining and Reclamation Act 1977	No agricultural activities occur on the alluvial valley floors in the lease area	None	-------->	-------->	-------->	Field observations and USGS topographic maps	None	The alluvial valley floors on tract will not be impacted due to mining activities

water, a reduction in water quality is possible because increased surface area chemical weathering takes place in the spoils. Dissolved solids would increase and contribute this increase to Coal Creek, thus increasing the salinity to downstream farming operations. All discharges will be monitored and treated according to the conditions of the applicants Non Point Discharge Effluent System permit.

6. VEGETATION

6.1 Affected Environment

The tract consists of 484 acres. The tract contains four vegetative communities: sagebrush 154.5 ac., mountain shrub 290.3 ac., aspen 33 ac., riparian 6.2 ac. Type designations and numbers are those used by the BLM as described in BLM Manuals 9160-9162 (Figure 5).

6.1.1 Sagebrush, Type 4

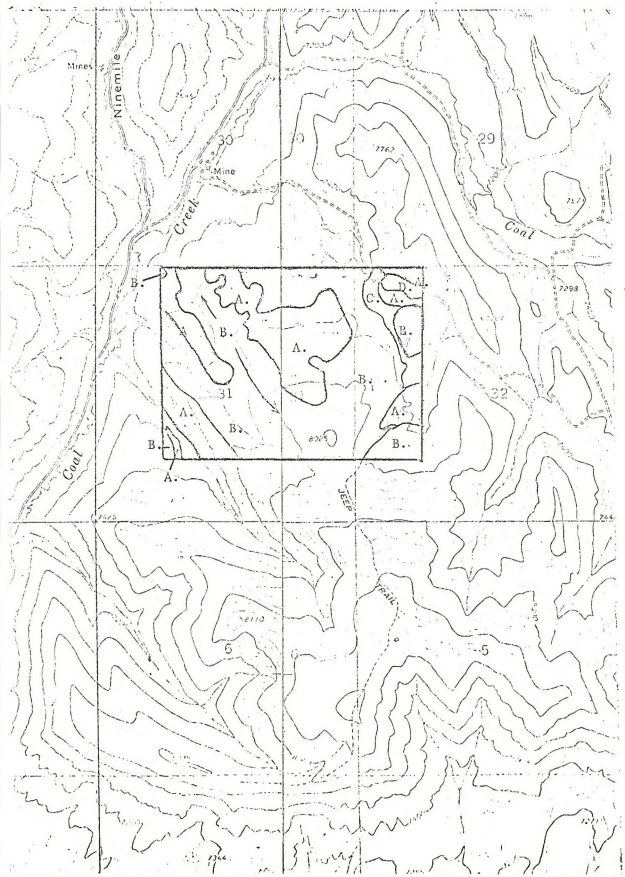
Big sagebrush (Artemisia tridentata tridentata) is the most common species to this community. Grass species dominating in the sagebrush type are: Indian ricegrass (Oryzopsis hymenoides), western wheatgrass (Agropyron smithii), Sandburg bluegrass (Poa secunda), and needle-and-thread (Stipa comata).

6.1.2 Mountain Shrub, Type 5

A typical mountain shrub type of the tract supports a dense stand of shrubs 2 to 8 feet in height. The common species are: Utah serviceberry (Amelanchier

Figure 5

Jensen-Miller - VEGETATION



LEGEND:

A.	Sagebrush	154.5 ±
B.	Mt. Shrub	290.3 ±
C.	Aspen	33.0
D.	Riparian	6.2 ±

Total: 484 Acres

utahensis), western serviceberry (Amelanchier alnifolia), and Gambel oak (Quercus gambelii).

Relative forage value of this type depends largely on plant density, species composition, and season of use. This type provides important big game winter range where snow depth does not prohibit access; its primary value to livestock is as summer range for cattle and sheep. When understory vegetation is crowded out by heavy grazing, this vegetation type will often close into dense stands of one or more less desirable browse species, such as Gambel oak or rabbitbrush.

6.1.3 Aspen, Type 10

The dominant species of this type is quaking aspen (Populus tremuloides). Associated species are: aspen peavine (Lathyrus leucanthus), timothy (Phleum), mountain brome (Bromus marginatus), geranium (Geranium spp.), vetch (Vicia americana), licorice (Ozmorhiza), cowparsnip (Heracleum lanatum), larkspur (Delphinium nelsonii), and many others that make up this complex and varied plant community. This type is important for the production of water, shelter for livestock and wildlife, and for forage production, especially in the western mountain slope region.

6.1.4 Riparian, Type 20

This type occurs along the drainage and is 6.2 acres.

Associated species are: willow (Salix spp.), bluegrass, wheatgrass, bromes, rushes, sedges, and in the poorly drained, marshy areas, cattails (Typha latifolia).

6.1.5 Threatened and Endangered and Rare and Sensitive Plants

A survey for threatened, endangered, and rare plants was conducted on June 9, 1981 by the Bureau of Land Management. No threatened, endangered or rare plant species were found to occur on the tract; therefore, the impacts to endangered plants would be insignificant.

6.2 Environmental Consequences

The following mining-associated operations would destroy vegetation: coal removal, topsoil stockpiles, haul roads, and mine facilities.

Vegetative loss would begin with the construction of roads and surface facilities. The mining operations would produce the largest vegetation impact. Total removal of vegetation by mining of these tracts would have a secondary effect on surrounding vegetation. Once the vegetation is removed and is unavailable to herbivores, vegetation on surrounding areas would be subjected to increased use.

Length of the impact of total vegetative loss would depend upon the success of reclamation. Since current reclamation techniques such as recontouring and replacing topsoil have only been used for a few years, sufficient information is not available to predict the amount of time needed to establish secondary

succession. For some years, climatic conditions might prevent revegetation, extending the impacts of vegetative loss. Also, creation of a different soil might interfere with present native vegetation reestablishment.

The loss of native vegetative types would result in the following impacts on vegetative ecosystems. These impacts are not quantifiable by time frames.

(1) Loss of 75 acres of sagebrush and 50 acres of mountain shrub.

(2) Loss of a diverse vegetation capable of withstanding climatic extremes and utilizing precipitation and sunlight throughout the growing season.

(3) Loss of present vegetative successional stage.

(4) Loss of natural seed source, necessary for ecological succession and stability.

(5) Loss of nutrient cycling systems that utilize the soil, air, plants, micro organisms and physical forces to cycle nutrients from the soil and air to forms useable by plants.

(6) Loss of soil stability and erosion prevention by roots and shoots of vegetation.

THE SITE SPECIFIC ANALYSIS
VEGETATION

Tract Name or Number: Jenson-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Vegetation		acres:							
Sagebrush		154.5	5	14	29	75	Fair		
Mountain shrub		290.3	0	0	0	50			
Aspen		33	0	0	0	0			
Riparian		6.2	0	0	0	0			
T&E Plants	Impacts to threatened and endangered plants is insignificant	---------->	-------->	-------->	-------->	-------->	Good	---------->	---------->

6.2 Unavoidable Adverse Environmental Effects

The existing stage of plant succession would be unavoidably destroyed when vegetation is removed. The soil and microclimate condition produced after mining might be very different from existing conditions and make it impossible to establish and sustain native vegetation. In that case the loss of existing vegetation would be a permanent unavoidable impact. Even if native vegetation is planted or transplanted it will take 20 to 50 years to establish a self sustaining ecosystem comparable to premining conditions.

6.2.1 Short Term vs. Long Term

Vegetative losses of sagebrush, and mountain shrub communities would result in loss of productivity for wildlife populations. With successful reclamation, livestock productivity should increase since there should be more grasses and forbs, used in reseeding.

6.2.2 Irreversible/Irretrievable

Vegetative productivity would be irretrievably lost for the life of the mines. Vegetative successional stages would be irretrievably lost. Native vegetative seed sources would be irretrievably lost.

7. WILDLIFE

7.1 Affected Environment

7.1.1 Habitats

The 484 acres of this tract provide living space, food and cover for wildlife populations. Mountain shrub (60%) and sagebrush (32%) are the dominant habitat types. These are important to elk and mule deer. Elk critical winter range occurs. A small, 6 acre, riparian zone increases vegetative diversity and is valuable to small birds and mammals.

7.1.2 Populations

Elk are the major winter big game species on the tract. A population density of 35 per square mile has been estimated by Colorado Division of Wildlife (CDOW). Mule deer are primarily spring-summer-fall residents at a density of 21 per square mile. Deer migrate through in spring and fall increasing the density to 50 per square mile. No fisheries occur on the tract.

7.1.3 Threatened and Endangered

No designated critical habitats occur. No threatened or endangered species are resident on the tract. Bald eagles winter on the White River five miles south. They may occasionally hunt over the tract, but no known roosts or nests occur.

7.1.4 Wild Horses

None occur.

7.1.5 Land Use Planning Stipulations

Elk critical winter range occurs in T2N, R92W, Section 31: NE1/4, and Sec. 32: W1/2NW1/4. This area has been designated as unsuitable for surface mining. The White River Resource Area Coal Amendment 1981 states, that the Bureau of Land Management and the Colorado Division of Wildlife agree that portions of the study area are of a critical nature to many species of resident wildlife (Appendix A). Surface mining would have a significant impact on critical elk winter range. The Bureau and the Colorado Division of Wildlife have determined that these areas are unsuitable for surface mining. However, these areas may be considered for subsurface mining if a stipulation is incorporated into the lease. The stipulation would only allow surface facilities and occupancy determined by the BLM, after consultation with the Colorado Division of Wildlife, at the mine plan development stage.

7.1.6 Proposed Mitigation

Disturbance of the riparian zone in Section 32: NW1/4NW1/4 would reduce habitat diversity and, therefore, small mammal and bird species diversity. This area should be avoided when siting facilities and roads.

7.2 Environmental Consequences

The loss of 125 acres of mountain shrub and sagebrush habitat that would be mined over the 40 year mine life would displace an estimated 7 elk and 4-10 mule deer. In addition, 4 elk and 2-5 deer would be displaced due to human presence and noise, which would reduce habitat quality. The significance of

THE SITE SPECIFIC ANALYSIS
WILDLIFE

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Baseline	Anticipated Impact 1992	1995	2000	EML	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
HABITAT (acres)									
Sagebrush	None	155	5	14	29	75	Acceptable	None	
Mt. Shrub	None	290	0	0	0	50	Acceptable	None	
Aspen	None	33	0	0	0	0	Acceptable	None	
Riparian	None	6	0	0	0	0	Acceptable	None	Buffer zone
POPULATIONS									
Elk	Standard Stipulations	27	1	1	3	11	Acceptable	None	
Mule Deer	None	16-38	0-1	1-2	2-4	6-15	Acceptable	None	Review at mine plan
Fisheries		None					Acceptable		
T/E		None					Acceptable		
Wild Horses		None					Good		

this displacement of 17-26 animals would, in itself, be minor, if surrounding range could support these additional animals. However, winter ranges that are necessary for continued herd survival are deteriorating and being lost to development. Any additional unmitigated losses would cause carrying capacity decline, and eventual reduction in animal numbers.

7.2.1 Irreversible and Irretrievable

Individual animals that are killed by mining equipment and vehicles are irretrievable losses. These losses should not be great enough to endanger a species or gene pool.

7.2.2 Short Term vs. Long Term

Short term actions would cause habitat loss and displacement of wildlife, but should not significantly impair the area's ability to maintain long term wildlife productivity after removal of facilities and reclamation to mountain shrub and sagebrush wildlife habitat. While mining is in progress wildlife productivity on the disturbed areas would be greatly reduced, if not eliminated. Displaced deer and elk would be forced to use adjacent areas which are presently at or near maximum capacity.

8. RECREATION

8.1 Affected Environment

The majority of the tract has private surface ownership. Therefore, no public recreation opportunities are available. There are no ACECs, wilderness study

areas or wild and scenic rivers in or adjacent to the proposed lease tract. Hunting would be the primary activity, which is excellent in the area.

8.2 Environmental Consequences

There would be no adverse impacts to public recreation because the majority of the PRLA is private ownership. However, some opportunities for viewing big game may be lost but would not be significant. No impacts to ACECs, wilderness or wilderness study areas, or wild and scenic rivers are anticipated.

9. VISUAL RESOURCES

9.1 Affected Environment

Most of the tract is visible from Rio Blanco County Road #15 and is viewed as foreground/middleground. Visual sensitivity is moderate with a VRM Class III rating.

9.2 Environmental Consequences

During mine construction and operation the VRM class would change in the short-term from Class III to an interim Management Class V until reclamation was complete. However, because the mine is small and areas of surface disturbance would be small there would be no significant long-term impacts. This assumes reclamation of disturbed landscapes would occur throughout the life of the mine and follow OSM regulations.

THE SITE SPECIFIC ANALYSIS
RECREATION/VISUAL RESOURCES

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact: Baseline	1992	1995	2000	EML	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
Recreation									
ACEC		None							
Wilderness		None					Good	None	No significant impacts.
Wild and Scenic Rivers		None					Good	None	No significant impacts
Land Use Planning Stips.		None					Good	None	No significant impacts
Proposed Mitigation		None					Good	None	No significant impacts
VRM				Disturbed Areas					
Class		III	Y	Y	Y	Y	Good	None	Disturbed areas visible from county road will have short term impact to landscape.
Land Use Planning Stips.		None	--------->	--------->	--------->	--------->	Good	None	No significant impact.
Proposed Mitigation	OSM reclamation regulations	None	--------->	--------->	--------->	--------->	Good	None	No significant impact.

10. CULTURAL RESOURCES

10.1 Affected Environment

There is no Class III data for this PRLA. The Class II model for the Danforth Hills predicts that 1 site or artifact will be located for every 260 acres of land. This means that a maximum of 2 cultural sites should be found within this PRLA. Potential for subsurface components of archaeological sites is good in this area since soils appear to be aggrading and covered by dense vegetation in most places.

10.2 Environmental Consequences

Since no Class III Inventory has been performed the effects of mining upon cultural sites is unknown. Should inadvertent destruction occur there would be an irretrievable loss of cultural resource information since date sources could be lost. Several studies have shown that vandalism to cultural resources tends to occur in close proximity to improved roads (Williams: 1977, p. 72). Therefore, increased access could result in increased vandalism to cultural sites (see Decker and Vleck: 1981, pp. 16-17).

10.2.1 Mitigation: Committed

(1) The lessee shall conduct a cultural resource intensive field inventory in a manner specified by the authorized officer of the BLM on the 66-acre portion

of the lease area that was not previously inventoried at such a level of intensity before undertaking any activities that may disturb the surface of that portion of the unleased lands. The lessee shall contact the BLM District Manager prior to survey for survey locations. The inventory shall be conducted by a qualified professional cultural resource specialist (i.e., archaeologist, historian or historical architect, as appropriate), approved by the authorized officer, and a report of the inventory and recommendations for protecting any cultural resources identified shall be submitted to the Regional Director of the Office of Surface Mining (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area) and the authorized officer of the BLM. The lessee shall undertake measures, in accordance with instructions from the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area), to protect cultural resources on the leased land. The lessee shall not commence the surface disturbing activities until permission to proceed is given by the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area), to protect cultural resources on the leased land. The lessee shall not commence the surface disturbing activities until permission to proceed is given by the Regional Director (or the District Mining supervisor if activities are associated with coal exploration outside an approved mining permit area).

(2) The lessee shall protect all cultural resource properties within the lease area from lease-related activities until the cultural resource mitigation

measures can be implemented as part of an approved mining and reclamation plan or exploration plan.

(3) The cost of conducting the inventory, preparing reports, and carrying out mitigation measures shall be borne by the lessee.

(4) If cultural resources are discovered during operations under this lease, the lessee shall immediately bring them to the attention of the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area), or the authorized officer of the surface managing agency if the Regional Director, or District Mining Supervisor, as appropriate, is not available. The lessee shall not disturb such resources except as may be subsequently authorized by the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area). Within two (2) working days of notification, the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area) will evaluate or have evaluated any cultural resources discovered and will determine if any action may be required to protect or preserve such discoveries. The cost of data recovery for cultural resources discovered during lease operations shall be borne by the surface managing agency unless otherwise specified by the authorized officer of the BLM or of the surface managing agency (if different).

(5) All cultural resources shall remain under the jurisdiction of the United States until ownership is determined under applicable law.

THE SITE SPECIFIC ANALYSIS
CULTURAL RESOURCES

Tract Name or Number: Jenson-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EML			
Archaeology History	-Antiquities Act of 1906 -Nat'l Historic Preservation Act of 1966 -Arch. Resources Protc. Act of 1979	1 resource/260 ac.		-------->	-------->	-------->	Good-see Gordon & Kranzush KRCRA Class II: 1982 (pp. 190-191)	Increased activity due to better access can increase vandalism to sites. See: 1. Docker & Vicak: 1981 2. Williams: 1977 (pp. 72-74).	No Class III inventory has been done in this tract area. Baseline data is taken fom Class II predictive model for Danforth Hills: error rate 5-25%.
Land Use/ Occupied Dwellings	NA	NA					NA	NA	There are no occupied dwellings on this tract.

11. ECONOMICS

11.1 Affected Environment

The impacted area consists of the eastern portions of Rio Blanco and Moffat Counties, and includes the communities of Meeker and Craig. Eastern Rio Blanco County is expected to experience rapid growth during the 1990s as the result of oil shale development. Therefore, the labor market is likely to be tight, and any additional jobs would have to be filled by new people migrating to the county. However, eastern Moffat County is expected to receive little impact from oil shale development, and to have some surplus labor available for new jobs. As a result, Meeker will be facing the need to expand its sewer, fire protection, and other facilities and services during the decade, while Craig's capital improvement requirements should be smaller.

11.2 Environmental Consequences

Leasing Jensen-Miller PRLA would cause no significant impacts to the area. At full mine operation in 1995, Meeker's population would be increased about one percent. Because of its slack labor market, little or no impact would occur in Craig.

Total employment in Meeker would increase by about 15 during peak construction but drop to four at full mine operation (Table 2). Because most of the construction jobs might be filled by immigrants, population would rise by about 30 at the peak in 1992, then would fall to some three-to-five during the operation phase. Craig would receive an employment gain of about ten at peak

construction, but all operation employees are expected to live in Meeker. Construction of the mine would create annual wage and salary income of about $700,000 in Meeker and $400,000 in Craig. At full operation, employees living in Meeker would earn a total of about $100,000.

Impacts to livestock grazing and hunting, the only present activities on the tract that affect the local economy, would be insignificant (see agriculture and recreation analyses).

The mine would pay a total of approximately $100,000 annually in ad valorem and severance taxes and federal royalty. Of that amount, some $20,000 would accrue or be returned to Rio Blanco County. Meeker and Craig would each receive an additional few thousand dollars in property and sales taxes induced by growth and Meeker's severance tax share.

Table 2

Population Impacts from the Jensen-Miller PRLA

	No Action	Impact
Craig		
1992	18,045	8
1995	18,453	0
2000	18,753	0
Meeker		
1992	5,682	34
1995	6,315	6
2000	8,534	6

THE SITE SPECIFIC ANALYSIS
ECONOMICS

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact Baseline	1992	1995	2000	EML	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
Population									
Meeker	None	Varies by year	1	0	0	NA	Medium	Only construction materials	Figures are percents of No Action Alternative (baseline)
Craig			0	0	0	NA			
Employment									
Rio Blanco County	None	Varies by year	0	0	0	NA	Medium	Only construction materials	Reasonable baseline projections cannot be made beyond the year 2000
Moffat County			0	0	0	NA			
Wage and Salary Income									
Rio Blanco County	None	Varies by year	1	0	0	NA	Medium	None	"
Moffat County			0	0	0	NA			
Rio Blanco County Revenue	None	Varies by year	0	0	0	NA	Medium	None	
Community Revenue									
Meeker	None	Varies by year	0	0	0	NA	Medium	None	
Craig			0	0	0	NA			

12. SOCIOLOGY

Affected Environment and Environmental Consequences

This PRLA would have no social impacts because of the small size of the work force involved.

13. LAND USE: AGRICULTURAL

The impacts to grazing use of the tract would be insignificant since no more than 7 AUMs would be lost at any one time. See Table 3 for data (calculations made based on assumptions).

14. TRANSPORTATION

Affected Environment and Environmental Consequences

Access roads in the vicinity consist of Rio Blanco county road #15 which passes near the tract. There is presently no access into the tract. With the small mine as proposed there would be an unnoticeable increase in traffic with no significant adverse impacts. The increase in traffic would be highest during construction and drop off during operation with the decrease in employment. Coal used locally would be hauled over Rio Blanco county road #15 and Colorado Highway #13. There would be increased road maintenance costs for the county and state estimated at $6,300 per year. There are no significant adverse impacts.

THE SITE SPECIFIC ANALYSIS
SOCIOLOGY

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact					Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
		Baseline	1992	1995	2000	EM			
Social	None					None	--	--	--

Table 3

Grazing on the Jensen-Miller PRLA

Allotment #	Operator	Season of Use	Livestock Class	Special Use i.e., Calving	Total/Allot. (ac.) BLM	Total/Allot. (ac.) Private	Total/Tract (ac.) BLM	Total/Tract (ac.) Private
Rosenlund Sec. 15 Lease #6806	Dorothy Harvey & Carol Proctor	6/16 to 9/30	Sheep (800)	Unknown	872	2,000	40	440

NOTE: This is a Section 15 lease - the BLM land in the allotment occurs outside the original Colorado #1 Grazing District (Meeker). The BLM land is under lease to the operator until 2/28/89.

AUMs					
Total/ Allot. BLM	Total/ Allot. PVT	Total Actually Used BLM	Total Actually Used PVT	Total/Tract BLM	Total/Tract PVT
174	386	174	386	8	88

AUMs "significant" in terms of loss:
17% of AUMs for allotment occur on the tract.

Total AUMs including private, state and Federal:
560 AUMs.

Based on Assumptions...
Only 7 AUMs not available at any one time - insignificant impact.

THE SITE SPECIFIC ANALYSIS
LAND USE: AGRICULTURE

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact: Baseline	1992	1995	2000	EML	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
Land Use:									
Agricultural:	Impacts to grazing has been determined not significant, as only 7 AUMs would be unavailable at any one time, based on the assumptions. See table.	---------->	-------->	-------->	-------->	-------->	Fair	---------->	Impacts mitigated by SMCRA

15. NOISE

Affected Environment and Environmental Consequences

The only sources of noise on the tract are those low level sounds associated with an undeveloped natural environment and intermittent traffic from county road #15. Noise would increase on and in the vicinity of the proposed mine. There are no communities, residences or recreation areas in the immediate area and, therefore, would not have any effect upon the general population. The only impact would be to mine workers on the site, which would be mitigated through Federal regulations and can be considered insignificant.

16. NET ENERGY WORKSHEET

Energy Inputs	Amount per year (in BTUs)	Mine Life
1. Mining Operation	a. 4.84×10^9	b. 1.94×10^{11}
2. Product Transportation	a. 5.7×10^8	b. 2.28×10^{10}
3. Employee Transportation	a. 1.78×10^8	b. 7.12×10^9
4. Infrastructure Support	a. 3.82×10^7	b. 1.53×10^9
5. Total	a. 5.63×10^9	b. 2.25×10^{11}
Energy Outputs	a. 6.6×10^{11}	b. 2.64×10^{13}
Ration (output:input)	a. 117.2:1	b. 117.3:1

THE SITE SPECIFIC ANALYSIS
TRANSPORTATION/NOISE

Tract Name or Number: Jensen-Miller

State: Colorado

Leasing/Development Scenario: PRLA

Resource Element	Committed Mitigation	Anticipated Impact: Baseline	1992	1995	2000	EML	Data Reliability	Irreversible and Irretrievable Commitments	Comments (Context) (Proposed Mitigation)
Transportation				Increase In ADT					
Coal		0	0	3	3	0	Estimate	None	No significant impact
Employee		0	10	8	8	0	11	None	No significant impact
Noise									
Sources and levels		None	Construct.	Strip Mine 78 dB @ 500'	Strip Mine 78 dB @ 500'	None	Guess	None	No significant impact
Impacts to general population		None	-------->	-------->	-------->	-------->	Guess	None	No significant impact
Health and safety standards	Federal regulations	None	-------->	-------->	-------->	-------->	Guess	None	No significant impact

17. CUMULATIVE ANALYSIS

The Danforth Hills coal field, with which PRLA C-4275 is associated, has the potential for undergoing accelerated coal development. Within a six mile radius of the PRLA, there exists twelve (12) coal leases, three (3) additional PRLAs, and one delineated coal tract (second round of leasing for the Green River/Hams Fork Coal Region). The above leases, PRLAs, and coal tracts encompass approximately 21,000 acres. An undetermined, but probably large, increase in land surface alteration, water consumption and human population growth is expected should the coal reserves be mined. PRLA C-4275 development would add incrementally to cumulative impacts on all affected resources, but predominantly hydrology, soils, and wildlife. Cumulative impacts anticipated are:

- Loss of soils through accelerated erosion processes would add to the sediment yield of Coal Creek and eventually the White River.

- A reduction in water quality would probably result because of increased chemical weathering of reclaimed spoil piles. Dissolved solids would increase in Coal Creek and increase downstream salinity.

- Incremental loss of lands available for elk use would result in proportionate habitat losses and exponential herd reductions. Particularly in the Danforth Hills area, additive loss of remaining elk critical witner ranges through direct habitat loss and disturbance-induced nonuse may eventually result in serious reductions of the Main White River elk herd.

Cumulative regional affects on environmental and human resources, over time, are expected to be substantial should the Danforth Hills Coal field be fully developed. However, the impacts attributed to a single PRLA development would likely be small with impacts attributed to the extremely small PRLA, almost negligible.

18. PUBLIC INTEREST

No interest to date, other than the applicant's, have been expressed.

19. CONSISTENCY WITH BLM LAND USE PLANS

The coal amendment to the White River Resource Area Management Framework Plan deferred a decision on the application of the unsuitability criteria, but the area was recommended as unsuitable. This recommendations of unsuitability is consistent with adjacent BLM land use planning.

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APPENDIX A

SUMMARY OF APPLICATION OF UNSUITABILITY CRITERIA

SUMMARY OF UNSUITABILITY ANALYSIS
FROM
WHITE RIVER RESOURCE AREA
COAL MANAGEMENT FRAMEWORK PLAN AMENDMENT
FOR
PREFERENCE RIGHT LEASE APPLICATION C-4275

No areas within Preference Right Lease Application (PRLA) C-4275 are considered unsuitable as a result of the application of unsuitability criteria 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, and 20.

Application of unsuitability criteria 15 resulted in the following:

Criteria 15: State Resident Fish and Wildlife

Through joint consultation with the Colorado Division of Wildlife portions of the PRLA were identified as a critical nature to species of resident wildlife. It was determined that surface mining will have a significant impact on critical elk winter range. Joint consultation with Colorado Division of Wildlife has determined that the following areas are unsuitable for surface mining within PRLA C-4275:

T2N, R92W, 6th P.M.
Sec. 31: NE1/4
Sec. 32: W1/2NW1/4

The area may be considered acceptable for further consideration for leasing for development by subsurface mining techniques if a stipulation is incorporated into the lease. The stipulation is as follows:

- No surface facilities or occupancy will be allowed except on a site specific basis. Surface facilities and occupancy allowed will be determined by the BLM, after consultation with the Colorado Division of Wildlife, at the mine plan development stage. The area of stipulation is as follows:

  T2N, R92W, 6th P.M.
  Sec. 31: NE1/4
  Sec. 32: W1/2NW1/4

APPENDIX B

LEASE MITIGATION
(DEVELOPMENT ALTERNATIVE)

In the event of PRLA leasing, under the "Surface Mining Scenario" of the Development Alternative, the following mitigating measures will be incorporated into the lease in addition to the standard lease stipulations in Appendix C.

- All stipulations concerning compliance with the requirements of the Surface Mining Control and Reclamation Act will be included in the document approving the mining plan.

- The lessee shall be required to mitigate the loss or displacement of mule deer, elk, and sage grouse habitats, due to surface and underground coal mining operations. The lessee shall develop, in consultation with the Bureau of Land Management (BLM) and Colorado Division of Wildlife, a plan for replacement of mule deer, elk, and sage grouse historic habitat lost due to mining operations.

  The habitat recovery and replacement plan shall be developed based on estimates of lost or disturbed habitat as described in the Environmental Assessment for Preference Right Lease Application C-4275, or based upon revised data developed after this Environmental Assessment.

  Consultation and development of the habitat recovery and replacement plan shall be concurrent with development of the mine plan. Simultaneous with the filing of its mine plan, the lessee shall submit for approval to the BLM the habitat recovery and replacement plan.

  The final habitat recovery and replacement plan shall indicate the methods to be employed by the lessee which will ensure that the recovered or replaced lands has the carrying capacity to support populations of applicable indicator species as agreed upon by the BLM and the Colorado Division of Wildlife.

  The habitat recovery and replacement plan shall include the following:

  (1) A habitat analysis of the permit area which:

      (i) identifies the above species which occupy the permit area, and

      (ii) includes an analysis of the quality or carrying capacity of the habitat for those species.

  (2) A detailed description of the methods selected by the lessee to mitigate habitat loss, together with comparative analyses of alternative methods which were considered and rejected by the lessee and the rationale for the decision to select the proposed methods.

      The methods utilized by the lessee for recovery and replacement may include, but are not limited to, the following techniques:

      (i) Increasing the quantity and quality of forage available to wildlife.

      (ii) The acquisition of critical wildlife habitats.

(iii) Mechanical manipulation of low-quality wildlife habitat to increase its carrying capacity for selected wildlife species.

(iv) Recovery, replacement or protection of important wildlife habitat by selected fencing.

(3) A timetable giving the periods of time which will be required to accomplish the habitat recovery or replacement plan and showing how this time table relates to the overall mining plan.

- The lessee shall prepare and submit to the BLM, concurrently with the filing of its mine plan, a social, economic, and transportation impact data concerning offsite aspects of the proposed development.

(1) These data include the following:

(i) The estimated number of employees the specific lease operation will require during phases of construction and operation, and the specific years during which each number and type of employees will be required;

(ii) The estimated transportation mode(s), route(s) and frequency of trips for the extracted resource;

(iii) Contemplated construction of transportation facilities;

(iv) The estimated effect of any truck movements on the rate of roadway pavement deterioration, on the design life of the transportation mode, on the level of surface repair and on overall safety to the motoring public;

(v) The estimated effect of the influx of population resulting from the proposed development on the transportation system at the county and local level; and

(2) These data will be updated as follows:

(i) Annually during the construction phase and operation phase until a full or stable level of operation is reached.

(ii) Thereafter, whenever a major change in the operation is planned (expansion, change of transportation mode, closing, etc.). This update will be provided at the time plans for such a change are made, not at the time of implementation.

- The lessee shall grant public access to public land adjacent to the lease by means of existing roads, trails, or ways. If the lessee must destroy or obstruct an existing route, the lessee shall provide an alternative route of equal quality. Public lands within the lease area and roads, trails and ways constructed by the lessee, shall be made accessible to the public unless such access would interfere with mining operations or create a safety hazard. Limiting access within one-half mile of buildings and work areas should be adequate for this purpose. Any additional limitation must be approved by the BLM.

- The United States of America considers the development of groundwater resources to be necessary and frequently indispensible to effective land management. Therefore, any goundwater intercepted by the lessee conducting mineral exploration or development shall be reported to the District Manager immediately including approximate quantities and a sample in a sealed quart container. The United States shall have the first opportunity to file state water right for the intercepted groundwater. The lessee may file for water rights only with a written waiver from the District Manager.

- Surface coal mining operations are prohibited on the following described tracts within the PRLA (approximately 240 acres):

T2N, R92W, 6th P.M.
Sec. 31: NE1/4
Sec. 32: W1/2NW1/4

- No surface facilities for subsurface mining techniques will be allowed on the following described tracts within the PRLA except on a site specific basis. Surface facilities and occupancy allowed will be determined by the BLM, after consultation with the Colorado Division of Wildlife, at the mine plan development stage.

T2N, R92W, 6th P.M.
Sec. 31: NE1/4
Sec. 32: W1/2NW1/4

APPENDIX C

STANDARD COAL LEASE FORM AND STIPULATIONS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SERIAL NUMBER

COAL LEASE

This lease, is entered into on_____, by the United States of America, the lessor, through the Bureau of Land Management, and

the lessee, and shall become effective on_____.

Sec. 1. STATUTES AND REGULATIONS - This lease is issued pursuant and subject to the terms and provisions of the Mineral Leasing Act of February 25, 1920, 41 Stat. 437, as amended, 30 U.S.C. Sections 181-287, hereafter referred to as the Act, and of the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. Section 1201 et seq., the Federal Coal Leasing Amendments Act of 1976, as amended, 90 Stat. 1083-1092, and in the case of acquired lands, the Mineral Leasing Act for Acquired Lands of September 7, 1947, as amended, 30 U.S.C. 351-359 et seq. This lease is also subject to all regulations of the Secretary of the Interior (including, but not limited to, 30 CFR Part 211 and Chapter VII and 43 CFR Group 3400), and to all regulations of the Secretary of Energy promulgated pursuant to Section 302 of the Department of Energy Organization Act of 1977, 42 U.S.C. Section 7152, which are now in force or (except as expressly limited herein) hereafter in force, and all of such regulations are made a part hereof.

WITNESSETH:

Sec. 2. RIGHTS OF LESSEE - The lessor, in consideration of any bonus paid (or to be paid if deferred), rents and royalties and other conditions hereinafter set forth, hereby grants and leases to the lessee the exclusive right and privilege to mine and dispose of

containing _____ acres, more or less and, subject to the conditions, limitations, and prohibitions provided in this lease and in applicable acts and regulations, the right to construct on the leased lands all works, buildings, structures, equipment, and appliances which may be necessary and convenient for the mining and preparation of the coal for market, and subject to the conditions herein provided, to use so much of the surface as may reasonably be required in the exercise of the rights and privileges herein granted for a period of 20 years and so long thereafter as the condition of continued operation is met.

(b) If the lessee files objections to the proposed readjusted conditions, the existing conditions shall remain in effect until there has been an agreement between the lessor and the lessee on the new conditions to be incorporated in the lease, or until the lessee has exhausted his rights of appeal under Section 31 of this lease, or until the lease is relinquished, except that the authorized officer may provide in the notice of readjusted lease terms that the readjustment or any part thereof is effective pending the outcome of the appeal. If the readjusted royalty provisions are subsequently rescinded or amended, the lessee shall be permitted to credit any excess royalty payments against royalties subsequently due to the lessor.

Sec. 24. DELIVERY OF PREMISES - Upon termination of this lease for any reason or relinquishment of a part of this lease, the lessee shall deliver to the lessor in good order and condition all or the appropriate part of leased lands. Delivery of the leased lands shall include underground timbering and such other supports and structures as are necessary for the preservation of the mine or deposit, and shall be in accordance with all other applicable provisions of the regulations including 30 CFR 211 and Chapter VII, for the completion of operations and abandonment.

Sec. 25. PROPRIETARY INFORMATION - Geological and geophysical data and information, including maps, trade secrets, and commercial and financial information which the lessor obtains from the lessee shall be treated in accordance with 43 CFR Part 2, 30 CFR 211.6 and other applicable regulations. Total lease reserve figures developed from this information will not be confidential.

Sec. 26. LESSEE'S LIABILITY TO LESSOR - (a) The lessee shall be liable to the United States for any damage suffered by the United States in any way arising from or connected with the lessee's activities and operations under this lease, except where damage is caused by employees of the United States acting within the scope of their authority.

(b) The lessee shall indemnify and hold harmless the United States from any and all claims arising from or connected with the lessee's activities and operations under this lease.

(c) In any case where liability without fault is imposed on the lessee pursuant to this section, and the damages involved were caused by the action of a third party, the rules of subrogation shall apply in accordance with the law of the jurisdiction where the damages occurred.

Sec. 27. INSPECTIONS AND INVESTIGATIONS - (a) All books and records maintained by the lessee showing information required by this lease or regulations must be kept current and in such manner that the books and records can be readily checked at the mine, upon request, by the Regional Director or District Mining Supervisor or their representative.

(b) The lessee shall permit any duly authorized officer or representative of the lessor at any reasonable time (1) to inspect or investigate the leased lands, the exploration and mining and reclamation operations, and all surface and underground improvements, works, machinery, and equipment, and all books and records pertaining to the lessee's obligations to the lessor under this lease and regulations; and (2) to copy, and make extracts from any such books and records.

Sec. 28. UNLAWFUL INTEREST - No member of, or Delegate to, Congress, or Resident Commissioner, after his election or appointment, either before or after he has qualified and during his continuance in office, and no officer or employee of the Department of the Interior, except as provided in 43 CFR 7.4(a)(3), shall hold any share or part in this lease or derive any benefit therefrom. The provisions of Section 3741 of the Revised Statutes, as amended, 41 U.S.C. Section 22, and the Act of June 25, 1948, 62 Stat. 702, as amended, 18 U.S.C. Sections 431-433, relating to contracts, enter into and form a part of this lease insofar as they may be applicable.

Sec. 29. APPEALS - The lessee shall have the right to appeal (a) under 43 CFR 3000.4 from an action or decision of any official of the Bureau of Land Management, (b) under 30 CFR 290 from an action, order, or decision of any official of the United States Geological Survey, or (c) under applicable regulations from any action or decision of any other official of the Department of the Interior arising in connection with this lease, including any action or decision pursuant to Section 23 of this lease with respect to the readjustment of conditions.

Sec. 3. DILIGENT DEVELOPMENT AND CONTINUED OPERATION - The lessee shall engage in the diligent development of the coal resources subject to the lease. After diligent development is achieved, the lessee shall maintain continued operation of the mine or mines on the leased lands. The terms "diligent development" and "continued operation" are defined in the applicable regulations in Titles 10, 30 and 43 of the Code of Federal Regulations.

Sec. 4. BOND - The lessee shall file with the appropriate Bureau of Land Management office a lease bond in the amount of $_____ for the use and benefit of the United States to insure payment of deferred bonus payments, rentals, and royalties and to insure compliance with all other items of this lease, the regulations and the Act (except for reclamation within the area covered by a surface mining permit issued under the permanent regulatory program by the regulatory authority) and, if appropriate, for the protection of the interests of the surface owners on the leased lands. An increase in the amount of the lease bond may be required by the lessor at any time during the life of the lease to reflect changed conditions.

Sec. 5. RENTAL - An annual rental of $_____ for each acre or fraction thereof shall be paid in advance on or before the anniversary date of this lease. This section shall not be subject to revision except in the course of lease readjustment.

Sec. 6. PRODUCTION ROYALTY - The lessee shall pay a production royalty of _____ percent of the value of coal produced by strip or auger mining methods and _____ percent of the value of coal produced by underground mining methods. The value of coal shall be determined as set forth in the regulations in 30 CFR 211. Production royalties paid for a calendar month shall be reduced by the amount of any advance royalties paid under this lease to the extent that such advance royalties have not been used to reduce production royalties in a previous month. However, production royalties payable after the 20th year of the lease shall not be reduced by advance royalties paid during the first 20 years of the lease. Production royalties shall be payable the final day of the month succeeding the calendar month in which the coal is sold, unless otherwise specified in 30 CFR 211. The royalty rates provided in this section shall not be subject to revision except in the course of lease readjustment.

Sec. 7. ADVANCE ROYALTY - Upon request by the lessee the District Mining Supervisor may accept, for a total of not more than 10 years, the payment of advance royalties in lieu of the condition of continued operation consistent with the regulations in 43 CFR 3473 and 30 CFR 211. The advance royalty shall be based on a percent of the value of a minimum number of tons which shall be determined in the manner established by the regulations in 43 CFR 3473.

Sec. 8. METHOD OF PAYMENTS - The lessee shall make rental payments to the appropriate Bureau of Land Management (BLM) office until production royalties become payable. Thereafter, all rentals, production royalties and advance royalties shall be paid to the appropriate office of the United States Geological Survey.

Sec. 9. EXPLORATION PLAN - The lessee shall not commence any exploration, except casual use, on the leased lands without an approved exploration plan. Exploration plans for leased lands covered by an approved mining permit shall be submitted to the Regional Director of the Office of Surface Mining in accordance with the regulations in 30 CFR Chapter VII. Exploration plans for leased lands not covered by an approved mining permit shall be submitted to the District Mining Supervisor in accordance with the regulations in 30 CFR 211.

Sec. 10. MINING PLAN - In accordance with the regulations in 30 CFR 211 and Chapter VII, the lessee shall submit a mining and reclamation plan not more than three years after the effective date of this lease. Mining operations shall not commence until after the mining and reclamation plan is approved. The mining and reclamation shall be conducted in accordance with the approved mining and reclamation plan. Exploration activities which were not included in the approved mining and reclamation plan require submittal of exploration plans in accordance with Section 9 of this lease.

Sec. 11. LOGICAL MINING UNIT (LMU) - This lease is automatically considered to be an LMU. This LMU may be enlarged, adjusted or diminished in accordance with the applicable regulations in Titles 10, 30 and 43 of the Code of Federal Regulations. The mining plan for the LMU shall require that the reserves of the LMU will be mined within a period of 40 years in accordance with 30 CFR 211 and 43 CFR 3400.0-5. The definition of LMU and LMU reserves and other applicable conditions are set forth in the regulations in 43 CFR 3400.0-5 and 3475, 30 CFR 211, and Title 10 of the Code of Federal Regulations.

Sec. 12. OPERATIONS ON LEASED LANDS - (a) In accordance with conditions of this lease, the exploration and mining and reclamation plans, the permit issued pursuant to 30 CFR Chapter VII, and all applicable acts and regulations, the lessee shall exercise reasonable diligence, skill, and care in all operations on leased lands.

(b) The lessee shall minimize to the maximum extent possible wasting of the coal deposits and other mineral and nonmineral resources, including, but not limited to, surface resources which may be found in, upon, or under such lands.

Sec. 13. SPECIAL STATUTES - The lessee shall comply with the provisions of the Federal Water Pollution Control Act (33 U.S.C. 1151-1175) and the Clean Air Act (42 U.S.C. 7401 et seq.).

Sec. 14. AUTHORIZATION OF OTHER USES AND DISPOSITION OF LEASED LANDS - (a) The lessor reserves the right to authorize other uses of the leased lands by regulation or by issuing, in addition to this lease, leases, licenses, permits, easements, or rights-of-way, including leases for the development of minerals other than coal under the Act. The lessor may authorize any other uses of the leased lands that do not unreasonably interfere with the exploration and mining operations of the lessee, and the lessee shall make all reasonable efforts to avoid interference with such authorized uses.

(b) The lessor reserves the right: (i) to sell or otherwise dispose of the surface of the leased lands under existing law or laws hereafter enacted insofar as said surface is not necessary for the use of the lessee in the extraction and removal of the coal therein, or (ii) to dispose of any resource in such lands if such disposal will not unreasonably interfere with the exploration and mining operations of the lessee.

(c) If the leased lands have been or shall hereafter be disposed of under laws reserving to the United States the deposits of coal therein, the lessee shall comply with all conditions as are or may hereafter be provided by the laws and regulations reserving such coal.

Sec. 15. EQUAL OPPORTUNITY CLAUSE - The lessee will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and the rules, regulations and relevant orders of the Secretary of Labor.

Sec. 16. CERTIFICATION OF NONSEGREGATED FACILITIES - By entering into this lease, the lessee certifies that he does not and will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not and will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The lessee agrees that a breach of this certification is a violation of the Equal Opportunity clause of this lease. As used in this certification, the term "segregated facilities" means, but is not limited to, any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. Lessee further agrees that (except where lessee has obtained identical certifications from proposed contractors and subcontractors for specific time periods) lessee will obtain identical certifications from proposed contractors and subcontractors prior to award of contracts or subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause; that lessee will retain such certifications in lessee's files; and that lessee will forward the following notice to such proposed contractors and subcontractors (except where proposed contractor or subcontractor has submitted identical certifications for specific time periods). Notice to Prospective Contractors and Subcontractors of Requirement for Certification of Nonsegregated Facilities. A Certification of Nonsegregated Facilities, as required by the May 9, 1967, order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a contract exceeding $10,000 which is not exempt from the provisions of the Equal Opportunity clause. Certification may be submitted either for each contract and subcontract or for all contracts and subcontracts during a period (i.e., quarterly, semiannually, or annually).

Sec. 17. EMPLOYMENT PRACTICES - The lessee shall pay all wages due persons employed on the leased lands at least twice each month in lawful money of the United States. The lessee shall grant all miners and other employees complete freedom to purchase goods and services of their own choice. The lessee shall restrict the work-day to not more than 8 hours in any one day for underground workers, except in case of emergency. The lessee shall employ no person under the age of 16 years in any mine below the surface. If the laws of the State in which the mine is situated require the employment, in a mine below the surface, of persons of an age greater than 16 years, the lessee shall comply with those laws.

Sec. 18. MONOPOLY AND FAIR PRACTICES - The lessor reserves full authority to promulgate and enforce orders and regulations under the provisions of Sections 30 and 32 of the Act (30 U.S.C. Section 187 and 189) necessary to insure that any sale of the production from the leased lands to the United States or to the public is at reasonable prices, to prevent monopoly, and to safeguard the public welfare, and such orders and regulations shall upon promulgation be binding upon the lessee.

Sec. 19. TRANSFERS -

☐ This lease may be transferred in whole or in part to any person, association or corporation qualified under 43 CFR 3472.1-1 to hold a lease.

☐ This lease may only be transferred in whole or in part to another public body, or to a person who will mine the coal on behalf of and for the use of the public body, or to a person for the limited purpose of creating a security interest in favor of a lender who agrees to be obligated to mine the coal on behalf of the public body. The transferee must be qualified under 43 CFR 3472.

☐ This lease may only be transferred in whole or in part to other small businesses qualifying under 13 CFR 121 and 43 CFR 3472.2-2(c).

Any transfer of this lease in whole or in part is subject to the procedures and requirements for approval in the relevant regulations in 43 CFR 3400. A transfer will become effective on the first day of the month following its approval by the authorized officer, or, if the transferee requests, the first day of the month of the approval.

Sec. 20. RELINQUISHMENT OF LEASE - The lessee may file a relinquishment of the entire lease, a legal subdivision or aliquot part thereof, but not less than 10 acres, or any bed of the coal deposits therein. The relinquishment shall be filed in triplicate with the authorized officer. Upon the determination by the authorized officer that the public interest shall not be impaired, that all accrued rentals and royalties have been paid and that all of the obligations of the lessee under the regulations and the lease terms have been met, the relinquishment shall be accepted effective the date filed.

Sec. 21. NONCOMPLIANCE - Any failure to comply with the conditions of this lease, the approved exploration and mining and reclamation plans, the regulations, or applicable acts shall be dealt with in accordance with the procedures set forth in the regulations.

Sec. 22. WAIVER OF CONDITIONS - The lessor reserves the right to waive any breach of the conditions contained in this lease, except the breach of such conditions as are required by the Act, but any such waiver shall extend only to the particular breach so waived and shall not limit the rights of the lessor with respect to any future breach; nor shall the waiver of a particular breach prevent cancellation of this lease for any other cause, or for the same cause occurring at another time.

Sec. 23. READJUSTMENT OF TERMS AND CONDITIONS - (a) The lease is subject to readjustment on the 20th year after the effective date and on each 10th year thereafter. In order that the lease may be readjusted as close as possible to the dates when it becomes subject to readjustment, the lessor may propose the terms of readjustment of any conditions of this lease, including rental and royalty rates, before the 20th year after the effective date and before each 10-year interval thereafter. The authorized officer shall notify the lessee whether he intends to readjust the terms and conditions of the lease and, if he intends to readjust, the nature of the readjustments in accordance with the regulations in 43 CFR 3451. Unless the lessee, within 60 days after receipt of the proposed readjusted terms, files with the lessor an objection to the proposed readjusted conditions or relinquishes the lease as of the effective date of the readjustment, the lessee shall be deemed conclusively to have agreed to such conditions.

Sec. 30. DEFERRED BONUS - This lease is issued subject to the payment of $_____ by the lessee as a deferred bonus. Payment of the deferred bonus by the lessee shall be made on a schedule specified in Section 31 (Special Stipulations) of this lease.

Sec. 31. SPECIAL STIPULATIONS - In addition to observing the general obligations and standards of performance set out in the current regulations, the Lessee shall comply with and be bound by the following special stipulations. These stipulations are also imposed upon the Lessee's agents and employees. The failure or refusal of any of these persons to comply with these stipulations shall be deemed a failure of the lessee to comply with the terms of this lease. The Lessee shall require his agents, contractors and subcontractors involved in activities concerning this lease to include these stipulations in the contracts between and among them. These stipulations may be revised or amended, in writing, by the mutual consent of the Lessor and the Lessee at any time to adjust to changed conditions or to correct an oversight. The Lessor may amend these stipulations at any time without the consent of the Lessee in order to make them consistent with any new federal or state statutes and the regulations promulgated under authority or new statutes.

(a) CULTURAL RESOURCES - (1) Before undertaking any activities that may disturb the surface of the leased lands, the lessee shall conduct a cultural resource intensive field inventory in a manner specified, by the authorized officer of the BLM or of the surface managing agency (if different) on portions of the mine plan area and adjacent areas, or exploration plan area, that may be adversely affected by lease-related activities and which were not previously inventoried at such a level of intensity. The inventory shall be conducted by a qualified professional cultural resource specialist (i.e., archeologist, historian or historical architect, as appropriate), approved by the authorized officer of the surface managing agency (BLM if the surface is privately owned), and a report of the inventory and recommendations for protecting any cultural resources identified shall be submitted to the Regional Director of the Office of Surface Mining (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area) and the authorized officer of the BLM or the surface managing agency (if different). The lessee shall undertake measures, in accordance with instructions from the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area), to protect cultural resources on the leased land. The lessee shall not commence the surface disturbing activities until permission to proceed is given by the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area).

(2) The lessee shall protect all cultural resource properties within the lease area from lease-related activities until the cultural resource mitigation measures can be implemented as part of an approved mining and reclamation plan or exploration plan.

(3) The cost of conducting the inventory, preparing reports, and carrying out mitigation measures shall be borne by the lessee.

(4) If cultural resources are discovered during operations under this lease, the lessee shall immediately bring them to the attention of the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area), or the authorized officer of the surface managing agency if the Regional Director, or District Mining Supervisor, as appropriate, is not available. The lessee shall not disturb such resources except as may be subsequently authorized by the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area). Within two (2) working days of notification, the Regional Director (or the District Mining Supervisor if activities are associated with coal exploration outside an approved mining permit area) will evaluate or have evaluated any cultural resources discovered and will determine if any action may be required to protect or preserve such discoveries. The cost of data recovery for cultural resources discovered during lease operations shall be borne by the surface managing agency unless otherwise specified by the authorized officer of the BLM or of the surface managing agency (if different).

(5) All cultural resources shall remain under the jurisdiction of the United States until ownership is determined under applicable law.

(b) PALEONTOLOGICAL RESOURCES - (1) Before undertaking any activities that may disturb the surface of the leased lands, the lessee shall contact the Bureau of Land Management to determine whether the authorized officer will require the lessee to conduct a paleontological appraisal of the mine plan and adjacent areas, or exploration plan areas, that may be adversely affected by lease-related activities. If the authorized officer determines that one is necessary, the paleontological appraisal shall be conducted by a qualified paleontologist approved by the authorized officer of the surface managing agency (BLM if the surface is privately owned), using the published literature and, where appropriate, field appraisals for determining the possible existence of larger and more conspicuous fossils of scientific significance. A report of the appraisal and recommendations for protecting any larger and more conspicuous fossils of significant scientific interest on the leased lands so identified shall be submitted to the authorized officer of the surface managing agency (BLM if the surface is privately owned). When necessary to protect and collect the larger and more conspicuous fossils of significant scientific interest on the leased lands, the lessee shall undertake the measures provided in the approval of the mining and reclamation plan or exploration plan.

(2) The lessee shall not knowingly disturb, alter, destroy or take any larger and more conspicuous fossils of significant scientific interest, and shall protect all such fossils in conformance with the measures included in the approval of the mining and reclamation plan or exploration plan.

(3) The lessee shall immediately bring any such fossils that might be altered or destroyed by his operation to the attention of the Regional Director or the District Mining Supervisor, as appropriate. Operations may continue as long as the fossil specimen or specimens would not be seriously damaged or destroyed by the activity. The Regional Director or the District Mining Supervisor, as appropriate, shall evaluate or have evaluated such discoveries brought to his attention and, within five (5) working days, shall notify the lessee what action shall be taken with respect to such discoveries.

(4) All such fossils of significant scientific interest shall remain under the jurisdiction of the United States until ownership is determined under applicable law. Copies of all paleontological resource data generated as a result of the lease term requirements will be provided to the Regional Director or the District Mining Supervisor, as appropriate.

(5) The cost of any required salvage of such fossils shall be borne by the United States.

(6) These conditions apply to all such fossils of significant scientific interest discovered within the lease area whether discovered in the overburden, interburden, or coal seam or seams.

(c) The lessee shall comply with all valid and applicable laws and regulations of Federal, State, and local governmental authority.

(d) DEFERRED BONUS PAYMENT SCHEDULE: